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Treatment of pediatric patients with acute myocarditis from Parvovirus B19 with the off label use of Telvibudine

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Introduction: Myocarditis is an inflammatory disease of the myocardium caused from various causes. One of the most common is viral infection from parvovirus B19. Children with this infection often do not fully recover and may develop heart failure, or worse, need heart transplantation or die.

It is our intension to share our experience with the off label use of telvibudine, a drug used for the treatment of hepatitis B, in the treatment of parvovirus B19 myocarditis.

Methods: In the course of 4 years (2013-2017) five children (age 2 to 16 years) were diagnosed in our institution with myocarditis due to parvovirus B19 after performing myocardial biopsy. PCR identification of the causative agent and viral load (number of copies) was performed.

With admission four out of five needed intravenous inotropes and one child mechanical ventilation.

Mean ejection fraction was 25% and the z score of the LVEDD was 2.4. All had ECG findings, elevated troponin levels and NT-proBNP levels > 4000pg/ml. Myocardial biopsy was performed 24-48 hours from admission. They were all treated with oral telvibudine (dose 15-20mg/kg/day) for duration of three to six months, after authorization from the National Drug Organization of Greece.

Results: All five patients experienced a full recovery of their myocardial function. Mean ejection fraction is 60% and the z score of the LVEDD was 1.3. NT-proBNP levels dropped <100pg/ml and till now there has been no deterioration of their myocardial function. They have been followed up in our department by cardiac ultrasound every 6 months and MRI.

Conclusion: Patients with the suspicion of myocarditis, symptoms and signs of heart failure should undergo myocardial biopsy immediately and specialized treatment, if possible, should be commenced. Treatment of patients with acute myocarditis, from parvovirus B19, with telvibudine might become a helpful tool in the prevention of serious sequels of the inflammatory process like heart failure, need for heart transplantation or even death and may even help in the full recovery of such patients.